Master in Artificial Intelligence
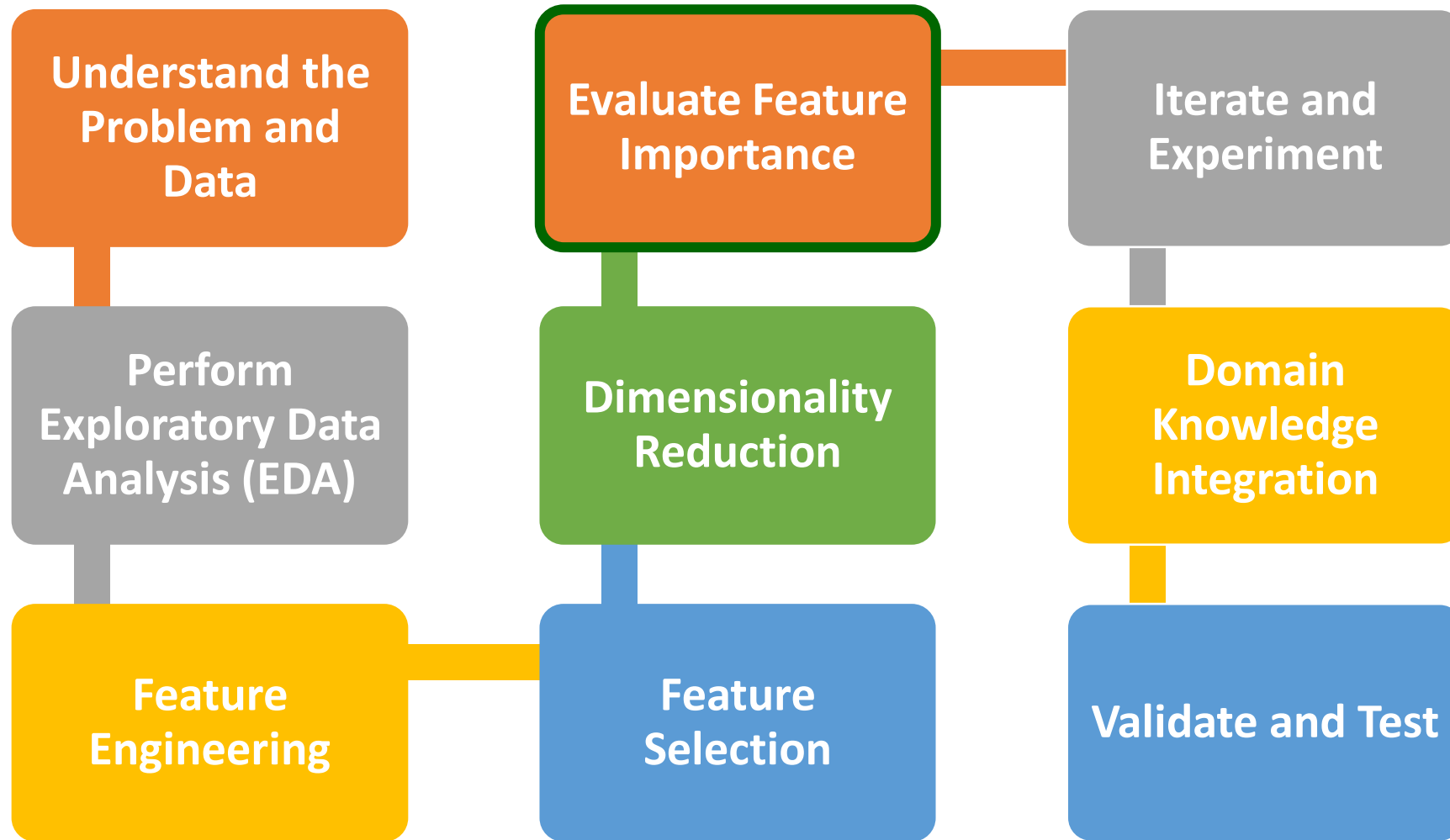

Feature Engineering V

The purpose of the section is to help you learn how to identify and extract meaningful features from the data to become a Successful Artificial Intelligence (AI) Engineer

At the end of this lecture, you will learn the following

Remaining steps of feature engineering

Then, Evaluate Feature Importance

Understand the Problem and Data

Evaluate Feature Importance

Iterate and Experiment

Perform Exploratory Data Analysis (EDA)

Dimensionality Reduction

Domain Knowledge Integration

Feature Engineering

Feature Selection

Validate and Test

Evaluate Feature Importance-How

Feature Importance Evaluation

- Assess the importance of features in predicting the target variable
  - Model-specific techniques
  - Feature importance scores
- Analyze how different features contribute the model's predictions
- Identify the most influential features

Iterate and experiment

Understand the Problem and Data

Evaluate Feature Importance

Iterate and Experiment

Perform Exploratory Data Analysis (EDA)

Dimensionality Reduction

Domain Knowledge Integration

Feature Engineering

Feature Selection

Validate and Test

How to Iterate and experiment

Understand the Problem and Data

Evaluate Feature Importance

Iterate and Experiment

Perform Exploratory Data Analysis (EDA)

Dimensionality Reduction

Domain Knowledge Integration

Feature Engineering

Feature Selection
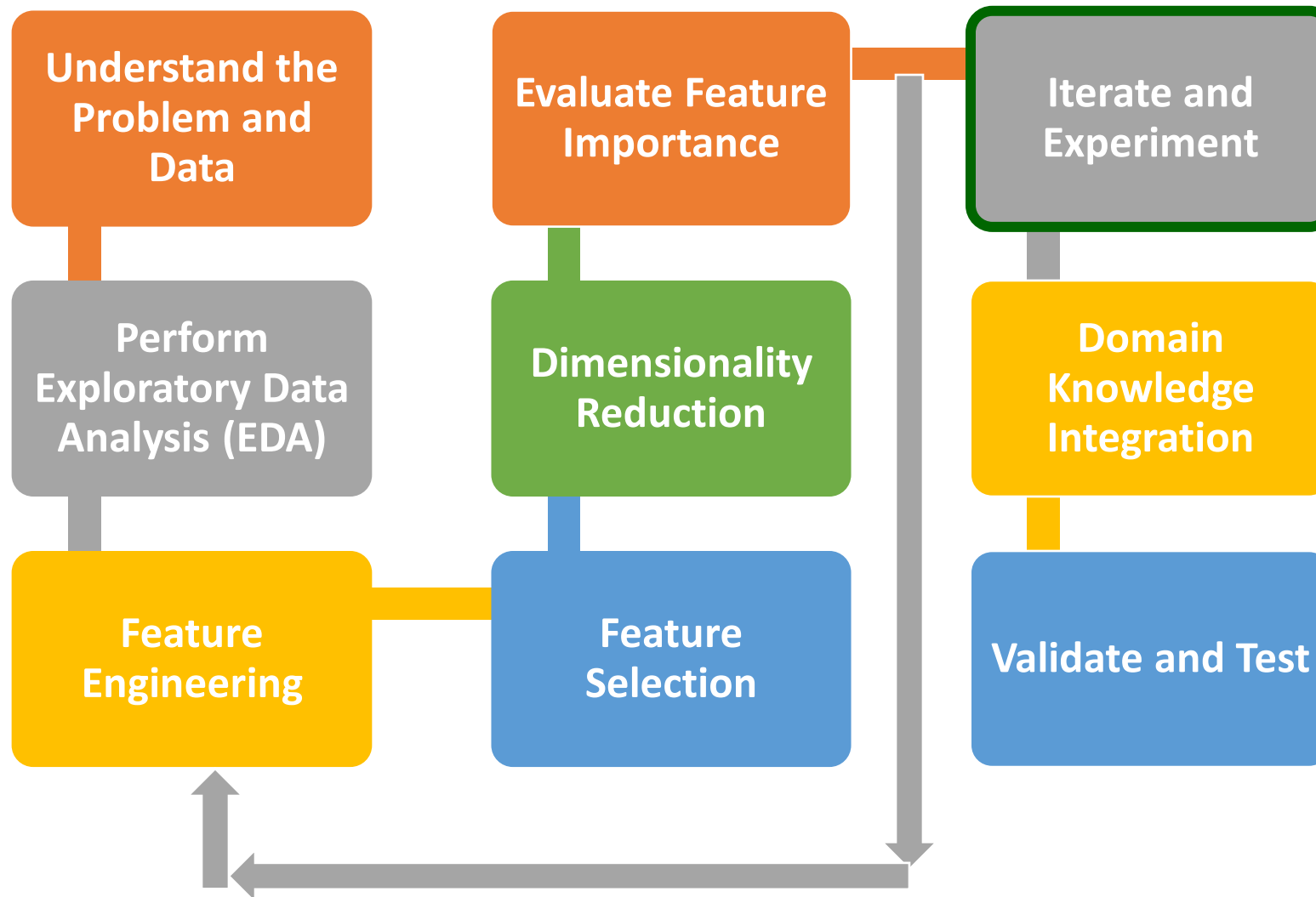
Validate and Test

Integrate Domain Knowledge-How?

Subject matter expertise

Domain knowledge

Business

More meaningful and relevant features

Collaborate with domain experts or stakeholders

Identify and engineer features

Capture important aspects of the problem domain
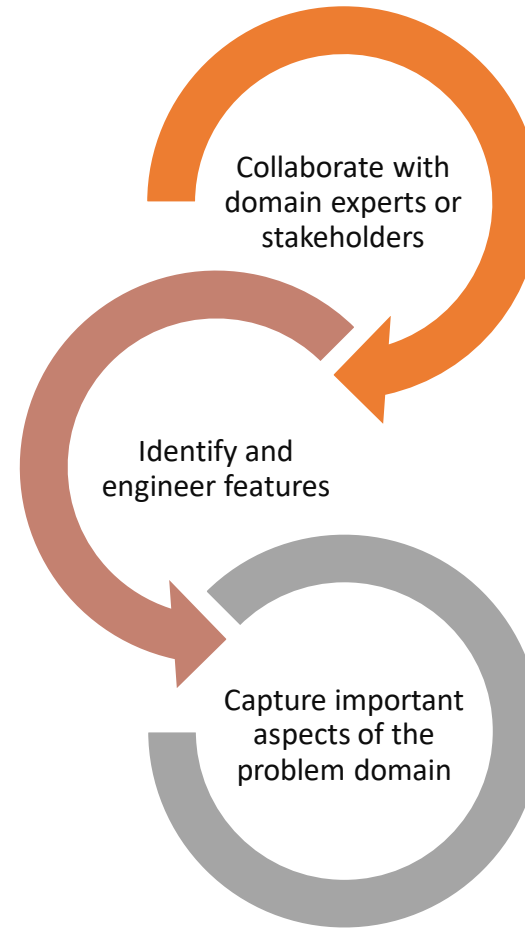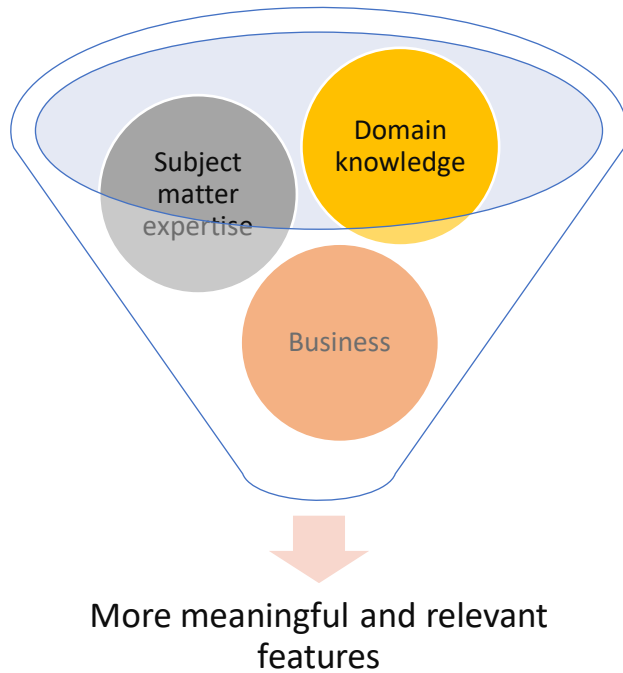
Finally Validate and Test

Understand the Problem and Data

Perform Exploratory Data Analysis (EDA)

Feature Engineering

Evaluate Feature Importance

Dimensionality Reduction

Feature Selection

Iterate and Experiment

Domain Knowledge Integration

Validate and Test

Enrichmentors   *Growing through Excellence over 40 years to become Best in Management*
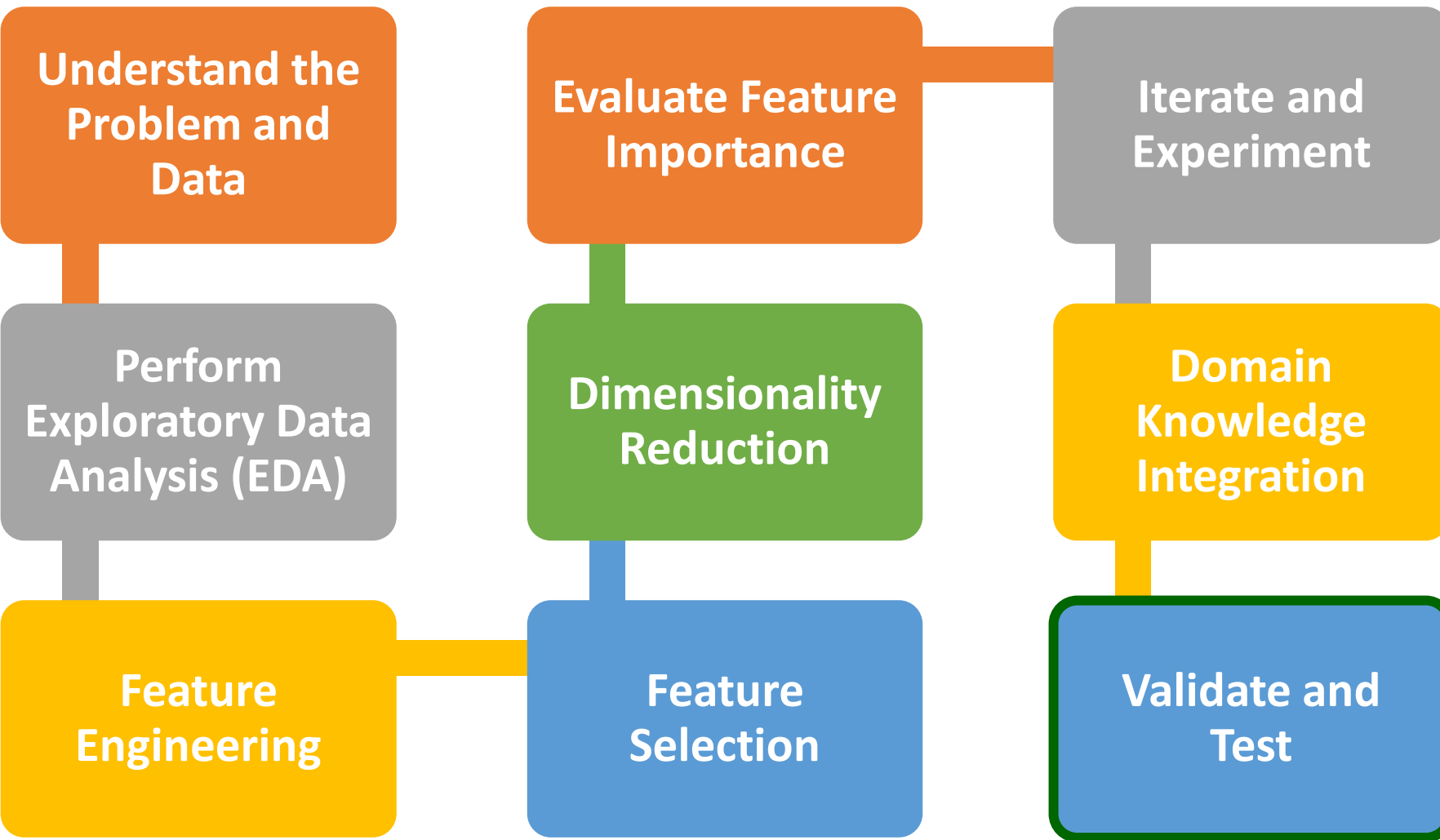
How to Validate and Test

Validate

- Effectiveness of the engineered features
- Cross-validation techniques or holdout sets
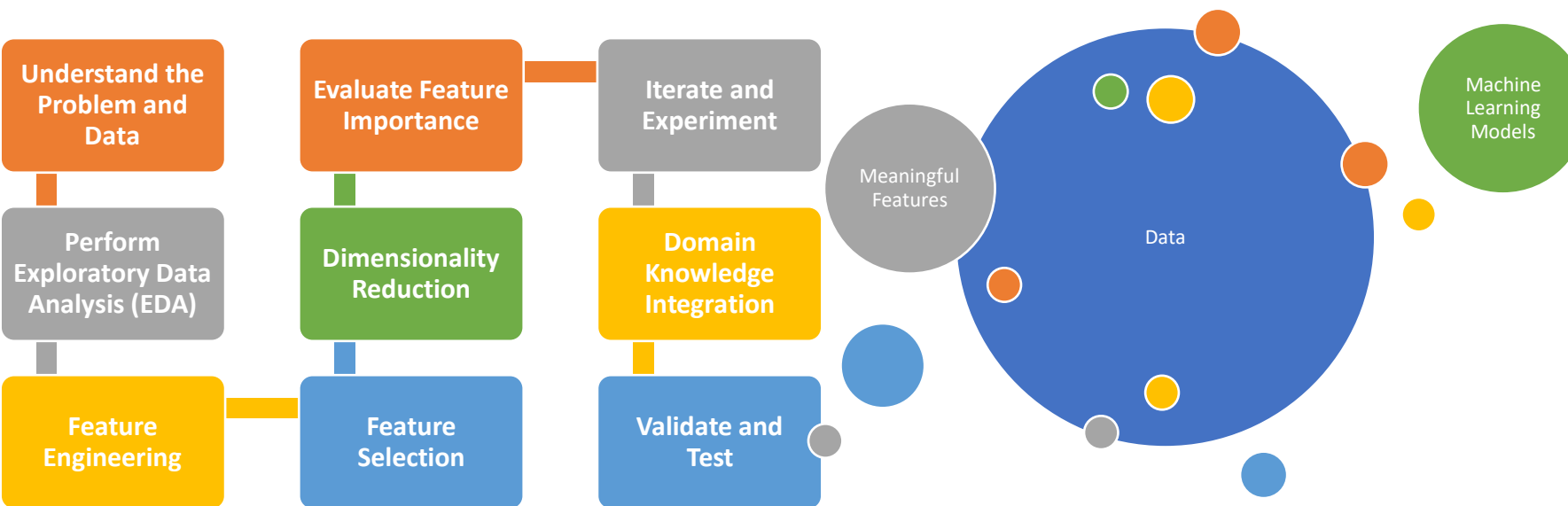- Ensure that they generalize well to unseen data

Test

- Final feature set
- On a separate test set
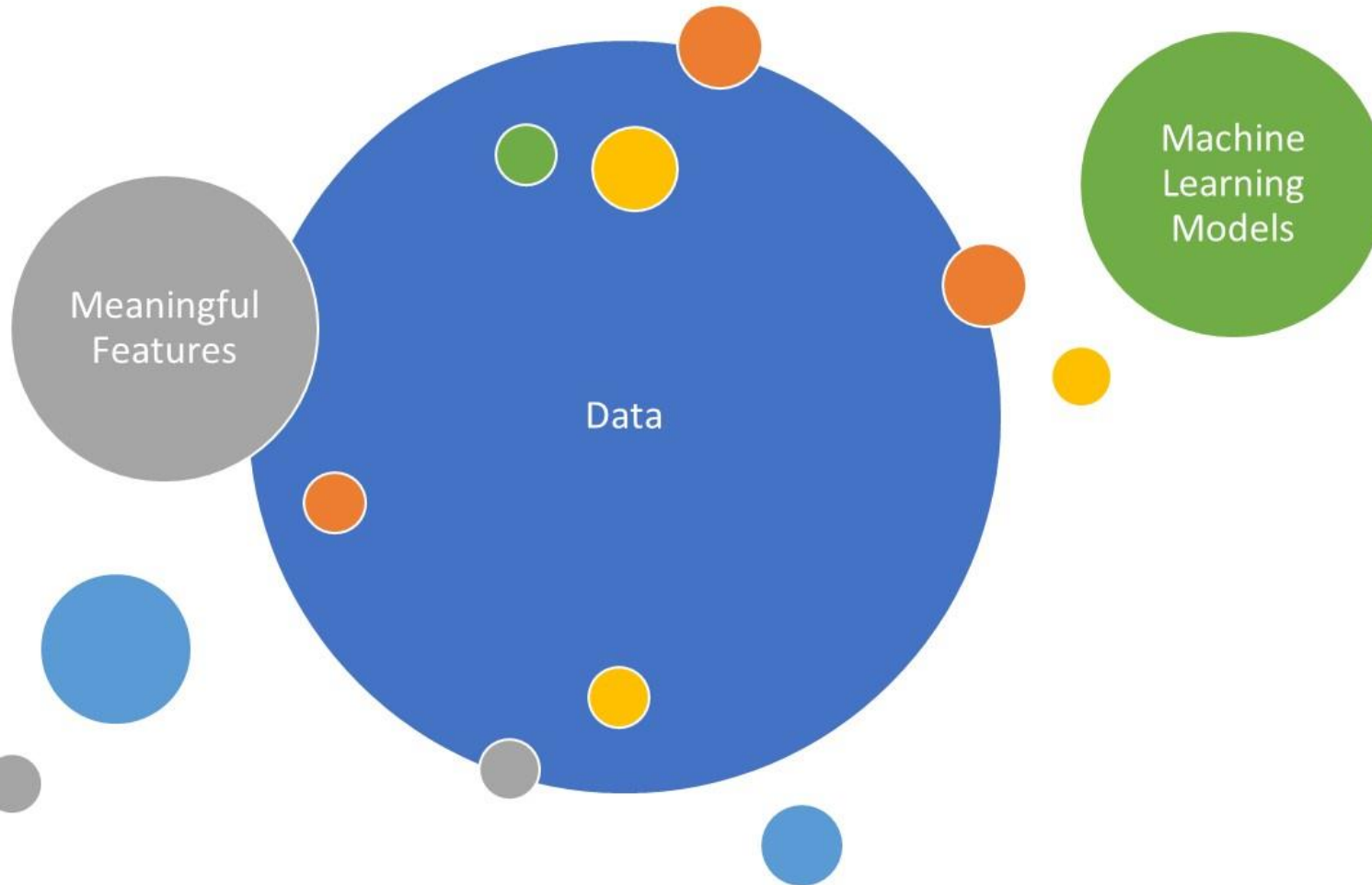- Evaluate its performance in a real-world scenario

Growing through Excellence over 40 years to become Best in Management

Overview

Understand the Problem and Data

Perform Exploratory Data Analysis (EDA)

Feature Engineering

Evaluate Feature Importance

Dimensionality Reduction

Feature Selection

Iterate and Experiment

Domain Knowledge Integration

Validate and Test

Meaningful Features

Data

Machine Learning Models

An example of how to identify and extract meaningful features from the data

Feature Engineering V